



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,990	03/30/2004	Sean Chang	2519-0104PUS1	2658

2292 7590 01/06/2005

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

BOUTSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/811,990	Applicant(s) CHANG ET AL.	
	Examiner Leo Boutsikaris	Art Unit 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-14 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 3,4,15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/8/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

The abstract of the disclosure is objected to because it contains the word “comprises”. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

Claim 20 is objected to because of the following informalities: the word “filer” in line 1 should be changed to “filter”. Furthermore, the phrase “first surface” in line 3 lacks antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2872

Claims 1-2, 5-14, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bates (US 4,076,393).

Regarding claim 1, Bates discloses a color wheel (Fig. 1) comprising:

a carrier element, which has a central bearing 20, a first carrier 34, and a second carrier 18, that rotates around the central bearing, the first carrier having a first aperture 35;

a filter group, which has a transparent zone (14a, 14b, 14c) and a filter bonding zone (annular area enclosed by the periphery defined by apertures 32), the filter group and the carrier element sharing the central bearing 20 and the filter bonding zone having a second aperture 16;

and one connection component 44, which is simultaneously mounted in the first aperture 35, and the second aperture 16 to fix the filter bonding zone of the filter group between the first carrier 34 and the second carrier 18 (line 65, col. 2 to line 65, col. 3).

Regarding claim 2, the transparent zone protrudes from the edge of the carrier element (disk 15 has a greater diameter than that of either disk 18 or 34).

Regarding claim 5, the first aperture 35 corresponds to the second aperture 16.

Regarding claim 6, the opening of the second aperture has a cave-like shape, and the second aperture surrounds the central bearing 20.

Regarding claim 7, the filter group comprises three filters, 14a, 14b, 14c.

Regarding claim 8, the second aperture 16 penetrates through the filter group.

Regarding claim 9, the second carrier 18 further comprises a third aperture 22 corresponding to the second aperture 16.

Regarding claim 10, the connection component 44 is simultaneously mounted in the first aperture 35, the second aperture 16, and the third aperture 22, to fix the filter bonding zone of the filter group between the first carrier 34 and the second carrier 18.

Regarding claim 11, the filter group further comprises a fourth aperture corresponding to the second aperture 16, and the fourth and the second aperture are located on corresponding opposite surfaces (since aperture 16 penetrates through the filter substrate 15).

Regarding claim 12, the second carrier 18 further comprises a fifth aperture corresponding to the fourth aperture (since aperture 22 penetrates through the second carrier).

Regarding claim 13, the connection component 44 is simultaneously mounted in the first aperture, second aperture, fourth aperture and fifth aperture to fix the filter bonding zone of the filter group between the first carrier 34 and the second carrier 18.

Regarding claim 14, the opening of the first aperture 35 has a cave-like shape.

Regarding claim 17, the color wheel of Fig. 1 is made by forming a first aperture 16 in a filter bonding zone of the filter group 14; forming a second aperture 35 on a first carrier 34 of a carrier element; and connecting a connection component 44 to the first aperture 16 and the second aperture 35 to fix the filter group onto the carrier element.

Regarding claim 18, the method further comprises the step of holding the filter group 14 using the first carrier 34 and a second carrier 18 of the carrier element.

Regarding claim 19, the connection component 44 is connected to the filter group 14, the first carrier 34 and the second carrier 18 simultaneously.

Regarding claim 20, the filter assembly 10 comprises a transparent zone (14a, 14b, 14c) which surrounds a central bearing 20; and a bonding zone (annular area enclosed by the

Art Unit: 2872

periphery defined by apertures 32), which surrounds the central bearing and has a first surface with a first aperture 16; wherein the transparent zone surrounds the outer side of the bonding zone with the central bearing as its center.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Sung (US 2003/0011911).

Sung discloses a filter assembly (Fig. 2, [0013]-[0014]) comprising:

a transparent zone 12, which surrounds a central bearing 110; and

a bonding zone in the form of annular region 118, which surrounds the central bearing and has a first surface with an aperture 112;

wherein the transparent zone surrounds around the outer side of the bonding zone 118 with the central bearing as its center.

### ***Allowable Subject Matter***

Claims 3-4, 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-4, 15-16 are allowable over the prior art of record for at least the reason that even though the prior art discloses color wheel assemblies comprising a first carrier, a second carrier and a color filter disk, each of the said elements having a central opening, and a

Art Unit: 2872

connection component in the form of a screw disposed through said openings, the screw tightening the filter disk between the first and second carriers, or color assemblies comprising a carrier and a color filter disk, wherein the carrier has an aperture filled with an adhesive to join the carrier and the color filter disk together, the prior art fails to teach or reasonably suggest, regarding claims 3, 15-16, a color wheel comprising a first carrier, and a filter group, wherein the connection component mounted in the first aperture and the second aperture is an adhesive component, such as a soft gel or an elastic gel, and regarding claim 4, a color wheel comprising a first carrier, and a filter group, wherein the second aperture does not penetrate through the filter group, as set forth by the claimed combination.

In the color wheel assembly disclosed by Bates, a screw 44 is used to apply pressure to the pressure spring plate 38, for holding the filter disk between the two carriers, and it would be against the principle of operation (i.e., applying pressure to the various components) to use adhesive for the assembly. Furthermore, because of the use of the screw 44, the opening 16 of the filter disk has to penetrate through the substrate 15.

Edlinger (US 5,868,482, Fig. 2a) and Chen (US 6,598,977, Fig. 4) disclose color wheel assemblies wherein adhesive is used to hold together the color filter disk with a carrier.

However, in the above devices only the carrier has an aperture, which is filled with the adhesive not the filter disk itself.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leo Boutsikaris, Ph.D.  
Primary Patent Examiner, AU 2872  
January 4, 2005

A handwritten signature in black ink, appearing to be 'LB' or a stylized version of the name 'Leo Boutsikaris'.